

Work Order ID 67625

Monday, March 28, 2011 3:13:59 PM



Page 1

Item ID: D350-636-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube LH

Start Date: 3/28/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/8/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date: 4-03-28 Tooling:

Date:

QC:

Date: SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

IIN-D350-636

H

100

0.00

DC

0.00

Document Control

DOCUMENT CONTROL

Memo

Photocopy blue file and type labels per PPP D350-636-011 CHG 006

8.16.15/16

CL 11-5-13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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110



Skidtubes

Skidtubes

0.00

0.00

Memo

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill only two fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8- Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail C to 0.500" (8 holes per side)

9- Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

10- Open up holes of Detail A to 0.297" (total of 2 holes per side)

BB

11/04/20

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Customer:

Reference:

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left from bending as per QSI 004

A/R Aluminum Rod batch: ☐ *MI16577*

BE 11/04/29

12-Grind welds flush as per Dwg D2750

BB 11/04/29

I20



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

8 11/04/29

Memo

0.00

I30



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

8 11/04/29

Memo

0.00

(70)

W/O:		WORK ORDER CHANGES					
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Customer:

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Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Chemical Conversion Coat per QS1005 4.1	0.00							
HandFinish	Memo	0.00							
Hand Finishing									
150	QC3- Inspect Part Finish	0.00							
QC	Memo	0.00							
Quality Control									

*M.H.**1 11-5-2**1 11-5-2*

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

0.00



Skidtubes

0.00

Skidtubes

Memo

1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.

2-Open up holes of Detail B to 0.750" (total of 4 holes per side) as per dwg D2750.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750 (welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R ☐ ☐ ☐ Sikaflex-291

batch: 116918 ☐ ☐ ☐

exp. date: 12/1/11

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 8)

A/R ☐ ☐ ☐ Aluminum Rod

batch: 1111677

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

BB 11/05/05

BB 11/05/05

BB

11/05/07

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Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D2750

BE 4/6/09

12-Deburr holes

BE 4/6/09

170

QC10- Inspect visual per QSI004- ground welds

0.00



0.00

QC

Memo

Quality Control

J 4/6/09

180

QC5- Inspect part completeness to step on W/O

0.00



0.00

QC

Memo

Quality Control

J 4/6/09

40

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Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

(1X) ~~0~~ m-L 11/05/09

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:

3:40

OVEN TEMPERATURE:

320

FINISH TIME:

4:10

(1X) ~~0~~ m-L 11/05/09

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

1 BR 11-5-11

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Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220		0.00							
	HandFinishing								
HandFinish	Memo	0.00							
Hand Finishing	1- Install inserts as per Dwg D2750								
230		0.00							
	HandFinishing								
HandFinish	Memo	0.00							
Hand Finishing	1-Inspect for Foreign Objects								
	2-Spray inside of tube with "LPS-3" batch: <u>N/A</u>								
	3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750 SIKA FLEX 241 BATCH: <u>116945</u> EXP DATE: <u>12-01</u>								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube A/R 55-o'ring lube batch: <u>114189</u>								
	5-Coat all exposed fasteners with "LPS Procyon" batch: <u>114596</u>								

1 BR 11-5-11

1 BR 11-5-11.

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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240



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8 11/05/13

250



Packaging

Packaging

Pick Kit

0.00

Memo

0.00

11/10/12

260



QC

Quality Control

QC4- 100% Inspect kits for completeness

0.00

Memo

0.00

8 11/07/16

*****ensure antiseize is on AN8C21A bolts*****

10

W/O:		WORK ORDER CHANGES					
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**Setup Start**

Stop



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Stop

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____



**Insp.
Stamp**

0.00



Packaging

0.00

Packaging

Memo

Packaging

Package as per PPP D350-636-011

Atch I

280

0.00



QC21- Final Inspection - Work Order Release

0.00

QC

Memo

Quality Control

11/5/16 *[Signature]*
ME 11-05-16

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Picklist Print

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Work Order ID: 67625

Parent Item: D350-636-011

Parent Item Name: Skidtube LH



Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07-13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC
 IPP Rev: M 08-04-22 update steps 4, 13 DD verified by: ec
 IPP Rev: N 08-09-23 revF as per dwg DD verified by: ec
 IPP Rev: O 09-02-06 apply antiseize on AN8C21A bolts as per PAR09-010
 DD verified by: EC IPP Rev: P 10.06.22
 revise seq 110 DD verf: EC IPP Rev: Q 10.10.01 as per IIN
 revH DD verf: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2594-3 		Manufactured	No			230	Each	426.0000	8	8			
O-Ring, 205 Skidtube													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				FP-A 66952		426			8			BR 11-5-11	
				65518		426							
AN960JD816 		Purchased	No			250	Each	75.0000	2	2			
1/2" washer, Alum													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				FP-A		75							
				106043		75			106643				
D2744 		Manufactured	No			110	Each	47.0000	1	1			
Cap													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG002		47							
				62715		18							
				65086		29							

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, March 28, 2011 3:14:06 PM

Page 2

Work Order ID: 67625

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

D2600-3-BENT
Extrusion Bent

Manufactured No

110 Each

9.0000

1 1

Location

LG

66874

Loc Qty

9

Loc Code

66875

9

D2743
Crossbolt Spacer

Manufactured No

160 Each

65.0000

8 8

Location

LG001

64003

Loc Qty

65

65

Loc Code

D2739
350 I Beam

Manufactured No

160 Each

0.0000

1 1

Location

LG001

63556

66968

Loc Qty

57

24

33

Loc Code

D3490-3
Cross Bolt Spacer

Manufactured No

160 Each

57.0000

4 4

Location

LG001

62450

Loc Qty

47

47

Loc Code

D3490-1
Cross Bolt Spacer

Manufactured No

160 Each

47.0000

4 4

BB 11/04/20

BB 11/05/06
B 67766 (28)

BB 11/05/05

BB 11/05/06
B 67773 (24)
B 67774 (24)

BB 11/05/06
B 67773 (24)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, March 28, 2011 3:14:06 PM

Work Order ID: 67625

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No

220

Each

1,335.000

38

38



Insert

LocationLoc QtyLoc Code

FP-B

234

110768 ✓

234

ST282

1101

110768

1101

38. BR 11-5-11

D3492-041

Manufactured

No

230

Each

156.0000

8

8



Plug Assembly

LocationLoc QtyLoc Code

FP-B

156

63994

16

65068 ✓

20

66937 ✓

120

4. BR 11-5-11

D3793-3

Manufactured

No

230

Each

14.0000

1

1



Wearshoe

LocationLoc QtyLoc Code

FP019

14

61711 ✓

3

64447 ✓

11

1 BR 11-5-11

AN8C35A

Purchased

No

230

Each

49.0000

1

1



BOLT

LocationLoc QtyLoc Code

FP-A

49

115188

3

115960 ✓

23

116874

23

1 BR 11-5-11

Monday, March 28, 2011 3:14:07 PM

Shop Packet Print

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, March 28, 2011 3:14:07 PM

Work Order ID: 67625

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

D3793-1

Manufactured No

230

Each

19.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP018

19

61710 ✓

5

64445

14

D3488-041

Manufactured No

230

Each

13.0000

1

1



Blade Fitting Assembly, LH

Location

Loc Qty

Loc Code

FP007

2

61689

2

FP008

11

62002 ✓

11

D3794-3

Manufactured No

230

Each

13.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP018

13

39422 ✓

1

61712 ✓

12

1 BR 11-5-11

1 BR 11-5-11

1 BR 11-5-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, March 28, 2011 3:14:07 PM

Work Order ID: 67625

Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011



Start Qty: 1.00

Required Qty: 1.00

AN6C44A	Purchased	No	230	Each	54.0000	4	4
							
BOLT							



<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	2	
103964	2	
FP-B	2	
115936	2	
ST344	50	
116874 ✓	50	

4 BR 11-5-11

MS21083C8	Purchased	No	230	Each	35.0000	1	1
							
NUT							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP-B 117291	15	
115884	15	
ST303	20	
117010	20	

1 BR 11-5-11

D3536-25	Manufactured	No	230	Each	16.0000	1	1
							
Gasket							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP012	16	
64446	4	
65903 ✓	12	

1 BR 11-5-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, March 28, 2011 3:14:07 PM

Page 6

Work Order ID: 67625

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

D3631-1

Manufactured No

230

Each

108.0000

8

8

Washer

Location

Loc Qty

Loc Code

FP-A

8

63647 ✓

8

ST072

100

66959

100

8 BR 11-5-11

D3791-1

Manufactured No

230

Each

12.0000

1

1

Wearplate

Location

Loc Qty

Loc Code

FP017

12

62239 ✓

12

AN960C10L

NAS1149C0332 ✓

Purchased

No

230

Each

0.0000

38

38

washer

117291

1 BR 11-5-11

38 BR 11-5-11

D2745

Manufactured No

230

Each

64.0000

8

8

Bushing

Location

Loc Qty

Loc Code

FP-A

23

63315

23

ST021

41

63315

41

8 BR 11-5-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 7

Monday, March 28, 2011 3:14:07 PM

Work Order ID: 67625

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C5A
Bolt

Purchased No 230 Each 755.0000 34 34

Location	Loc Qty	Loc Code
FP-A	27	
115835	27	
ST350	728	
108302	28	
115422	100	
116419	500	
116549	100	

34. 11-5-11

D3537-1
Wearpad

Manufactured No 230 Each 39.0000 3 3

Location	Loc Qty	Loc Code
FP017	39	
63313	2	
65927	37	

3 11-5-11

AN960C816L
WASHER

Purchased No 230 Each 0.0000 1 1

NAS1149C0832R. M114915

D3492-043
Plug Assembly

Manufactured No 230 Each 83.0000 8 8

Location	Loc Qty	Loc Code
FP-B	83	
66150	8	
66931	75	

8. 11-5-11

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Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, March 28, 2011 3:14:08 PM

Work Order ID: 67625

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

280.0000

4

4



BOLT



Location

Loc Qty

Loc Code

FP-A

45

111982

45

ST351

235

111982

10

116419

75

116549

50

116704 ✓

100

4. AR 11-5-11

NAS1611-013

Purchased

No

230

Each

8.0000

8

8



O-RING

Location

Loc Qty

Loc Code

FP-A

8

116582

8

8. AR 11-5-11

D3535-25

Manufactured

No

230

Each

15.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP018

15

62233

4

65167 ✓

11

1 AR 11-5-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, March 28, 2011 3:14:08 PM

Page 9

Work Order ID: 67625

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

D3794-1

Manufactured No

230 Each

11.0000

1

1



Gasket



Location

Loc Qty

Loc Code

FP010

11

39279 ✓

1

39421 ✓

1

61403 ✓

9

MS21043-6

Purchased

No

230 Each

583.0000

4

4



NUT

Location

Loc Qty

Loc Code

FG

20

103693

20

FP-A

88

112314 ✓

88

ST301

475

112314

475

D3493-1

Manufactured

No

250 Each

23.0000

2

2



Washer

Location

Loc Qty

Loc Code

ST062

23

62677

23

1 BL 11-5-11

4 BL 11-5-11

66975 Cuyaf12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, March 28, 2011 3:14:08 PM

Work Order ID: 67625

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased No

250 Each

35.0000

2

2

NUT



117291

[Signature]

Location

Loc Qty

Loc Code

FP-B

15

115884

15

ST303

20

117010

20

AN8C21A

Purchased No

250 Each

58.0000

2

2

BOLT



[Signature]

Location

Loc Qty

Loc Code

ST345

58

116381

58

D3672-1

Manufactured No

230 Each

1,395.000

8

Phenolic Washer



116381
4 BR.

Location

Loc Qty

Loc Code

FP-A

45

52505

45

ST074

1350

64177

850

66821

500

D2741

Manufactured No

250 Each

70.0000

1

1

Blade, 350 Skidtube



[Signature] 11/5/11

Location

Loc Qty

Loc Code

ST466

70

61341

30

63589

40

Q1341

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Monday, March 28, 2011 3:14:09 PM

Work Order ID: 67625



Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 3/28/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

D3532-1

Manufactured

No

250

Each

25.0000

2

2



Spacer



Rec'd 4/10/12 (2)

Location

Loc Qty

Loc Code

ST065

25

62218

25

62218

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

5

4

3

2

1

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN8C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- 1) MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH:
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- 8) WELD PER DART QSI 004
- 9) INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- 10) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 11) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- 13) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 67625
2/11/03

RELEASED
67625

F	INCORPORATE DSI 9413: QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN AG-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741; QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2759-4; INCORPORATE D2738 AND D2740	CP	98.11.18
R	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN	RA	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	RA		
CHECKED	RA	DRAWING NO.	REV. F
MFG. APPR.	RA	D2750	SHEET 1 OF 11
APPROVED	RA	TITLE	SCALE
DE APPR.	RA	350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	COPYRIGHT © 1998 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

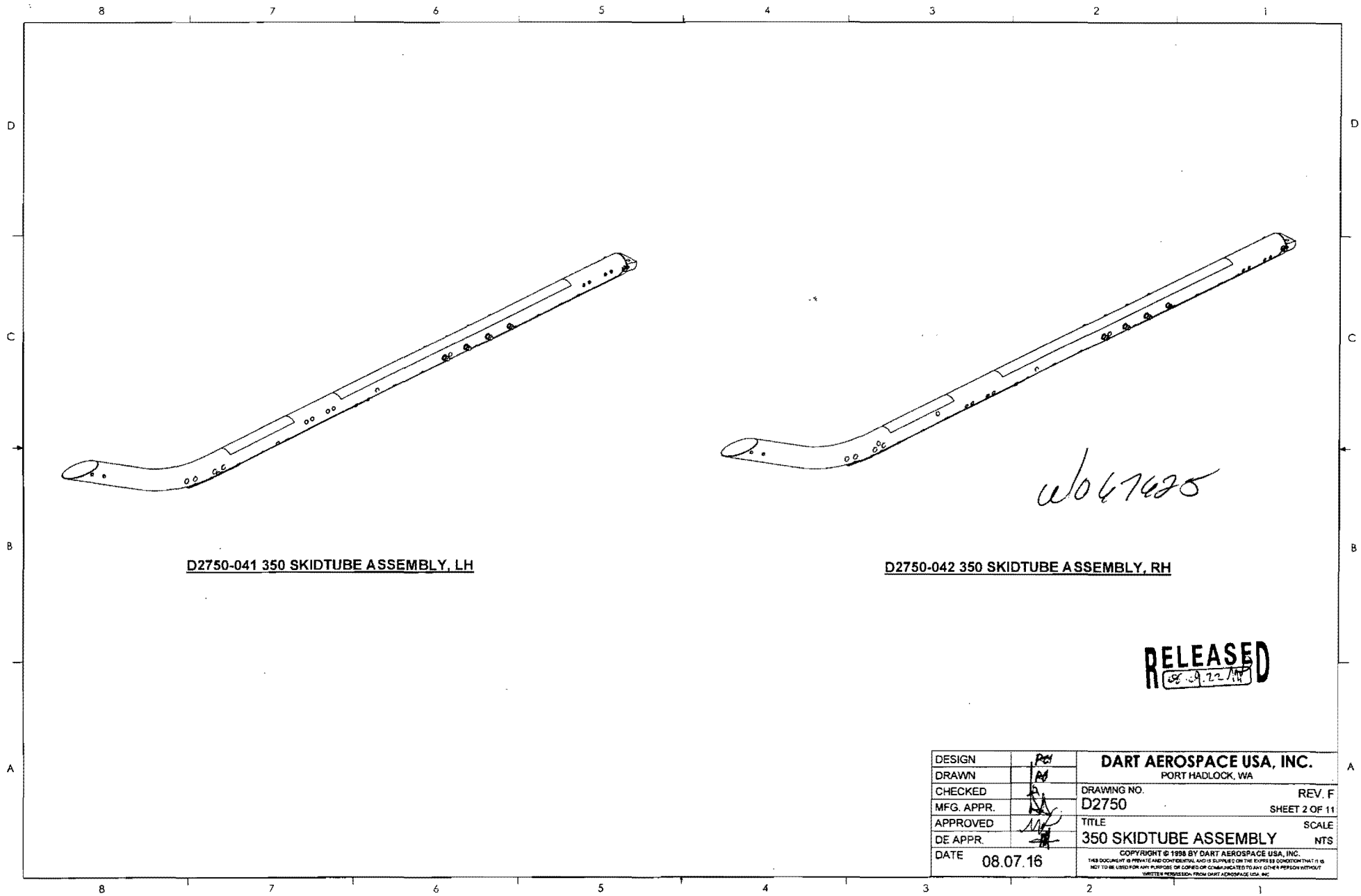
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2750-041 350 SKIDTUBE ASSEMBLY, LH

D2750-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
08-09-22/14

DESIGN	PCN	DART AEROSPACE USA, INC.	
DRAWN	AM	PORT HADLOCK, WA	
CHECKED	JA	DRAWING NO. D2750	REV. F
MFG. APPR.	MA	SHEET 2 OF 11	
APPROVED	MA	TITLE 350 SKIDTUBE ASSEMBLY	SCALE NTS
DE APPR.	MA	COPYRIGHT © 1998 BY DART AEROSPACE USA, INC.	
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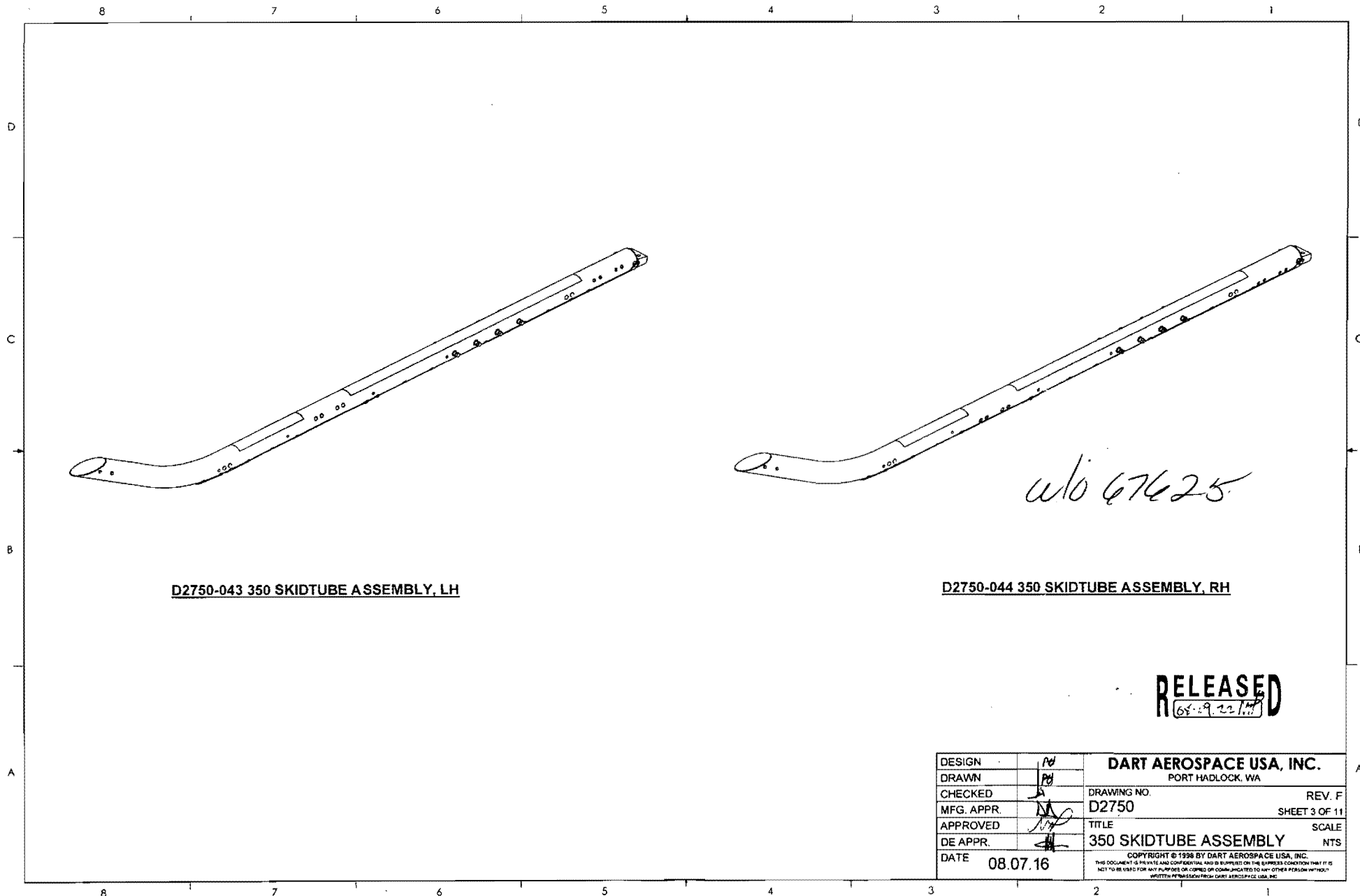
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



u/o 67625

RELEASED
68-19-221-111

DESIGN	PD	DART AEROSPACE USA, INC.	
DRAWN	PD	PORT HADLOCK, WA	
CHECKED	A	DRAWING NO.	REV. F
MFG. APPR.	MA	D2750	SHEET 3 OF 11
APPROVED	MA	TITLE	SCALE
DE APPR.	MA	350 SKIDTUBE ASSEMBLY	NTS
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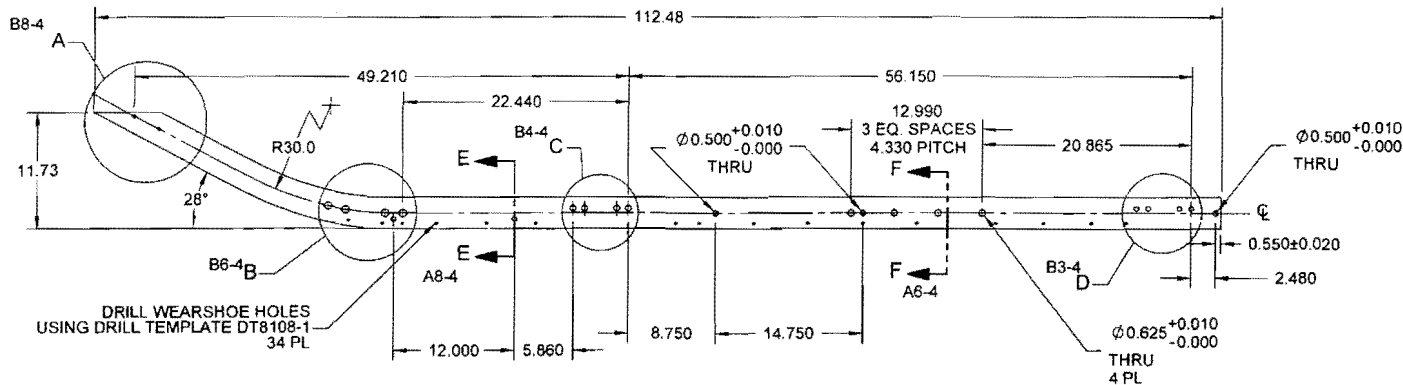
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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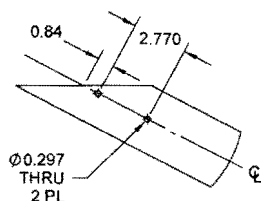
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

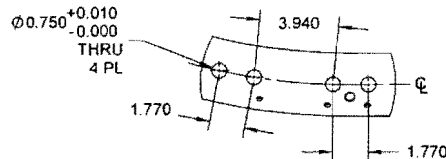
NOTE: Date & initial all entries



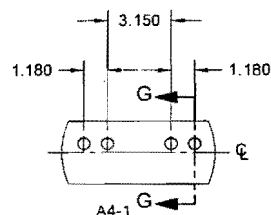
D2750-1 LH SKIDTUBE



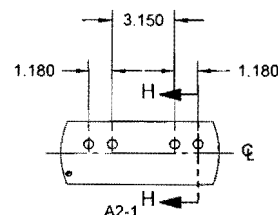
DETAIL A
SCALE 2X



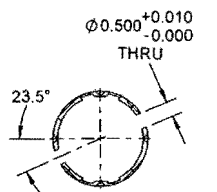
DETAIL B
SCALE 2X



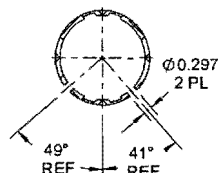
DETAIL C
SCALE 2X



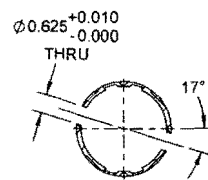
DETAIL D
SCALE 2X



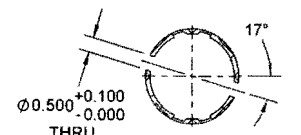
SECTION E-E
SCALE 3X, 2 PL



SECTION F-F
SCALE 3X, 17 PL





SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

RELEASED

DESIGN	PE	DART AEROSPACE USA, INC.	
DRAWN	PE	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 4 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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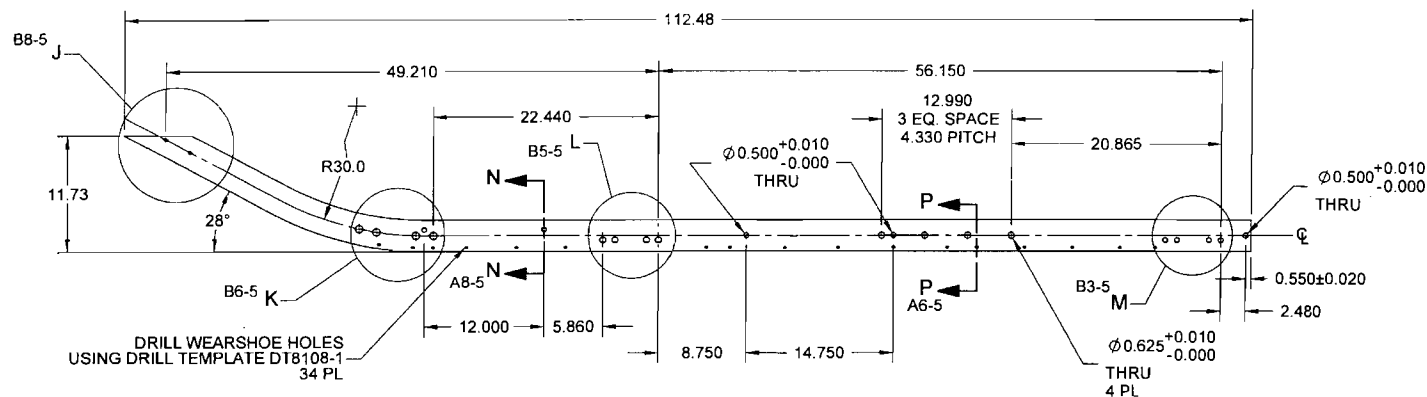
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

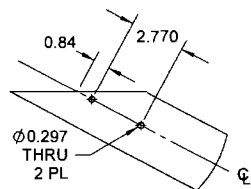
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

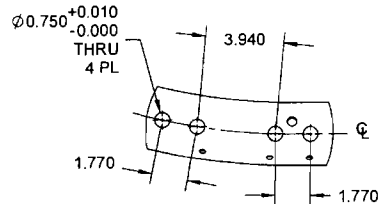
NOTE: Date & initial all entries



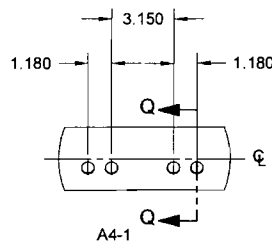
D2750-2 RH SKIDTUBE



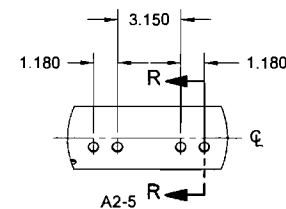
DETAIL J
SCALE 2X



DETAIL K
SCALE 2X

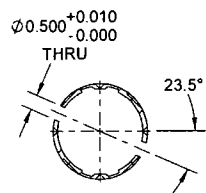


DETAIL L
SCALE 2X

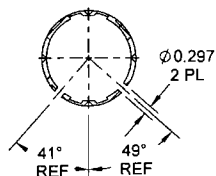


DETAIL M
SCALE 2X

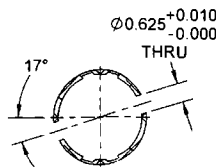
u/b 67625



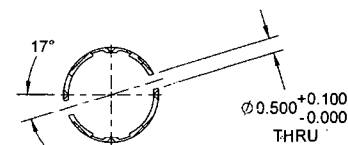
SECTION N-N
SCALE 3X, 2 PL



SECTION P-P
SCALE 3X, 17 PL









SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

RELEASED

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
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MFG. APPR.		D2750	SHEET 5 OF 11
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

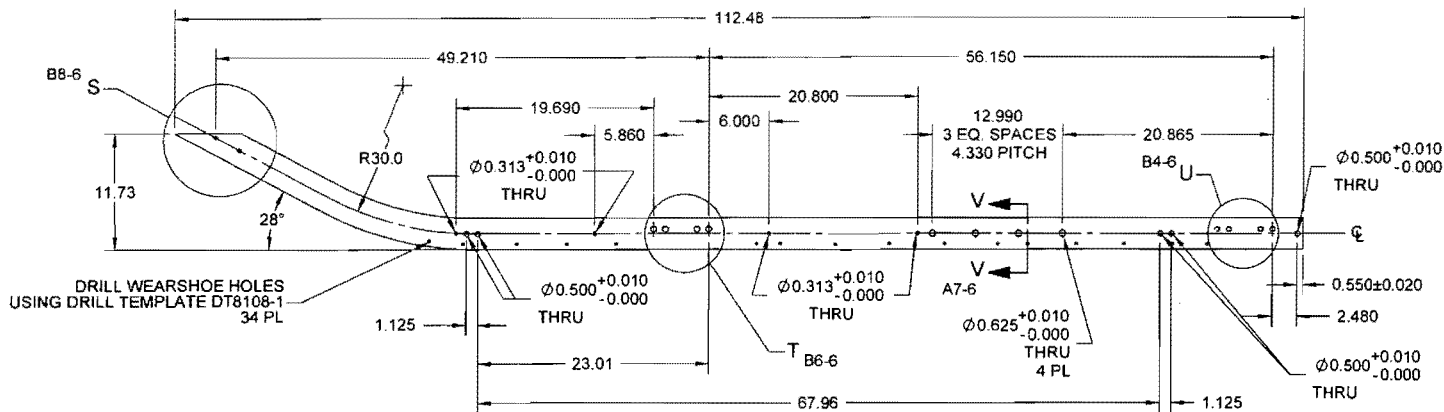
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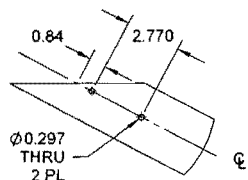
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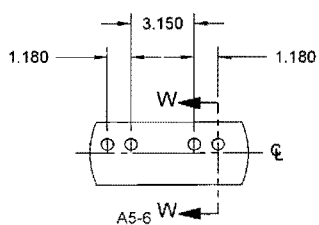
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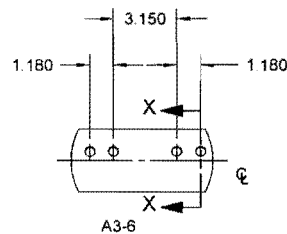
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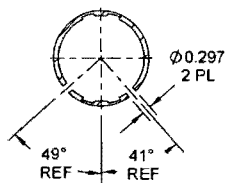
DETAIL S
SCALE 2X



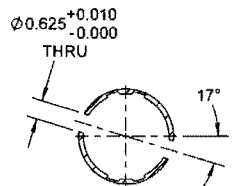
DETAIL T
SCALE 2X



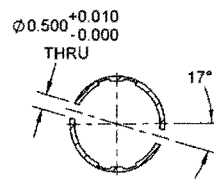
DETAIL U
SCALE 2X



SECTION V-V
SCALE 3X, 17 PL



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

w/o 67625

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08-22-11

DESIGN		DART AEROSPACE USA, INC.	
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MFG. APPR.			SHEET 6 OF 11
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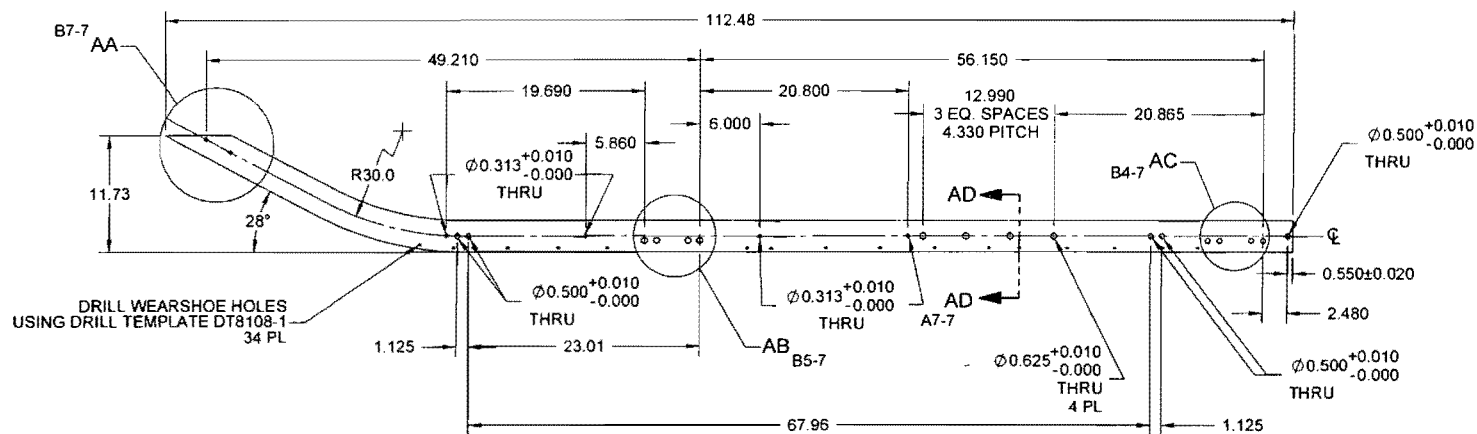
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

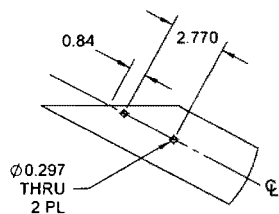
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

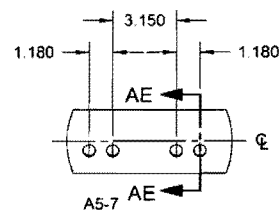
NOTE: Date & initial all entries



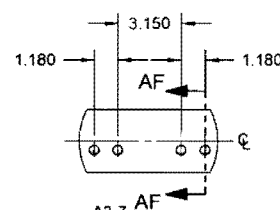
D2750-4 RH SKIDTUBE



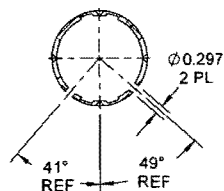
DETAIL AA
SCALE 2X



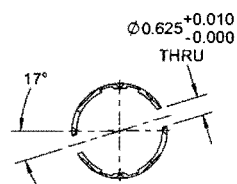
DETAIL AB
SCALE 2X



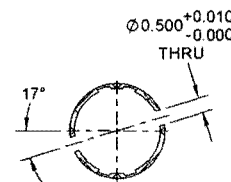
DETAIL AC
SCALE 2X



SECTION AD-AD
SCALE 3X, 17 PL



SECTION AE-AE
SCALE 3X, 4 PL



SECTION AF-AF
SCALE 3X, 4 PL

w/o 67625

RELEASED
06-04-22

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO. D2750	REV. F
MFG. APPR.		SHEET 7 OF 11	
APPROVED		TITLE 350 SKIDTUBE ASSEMBLY	SCALE
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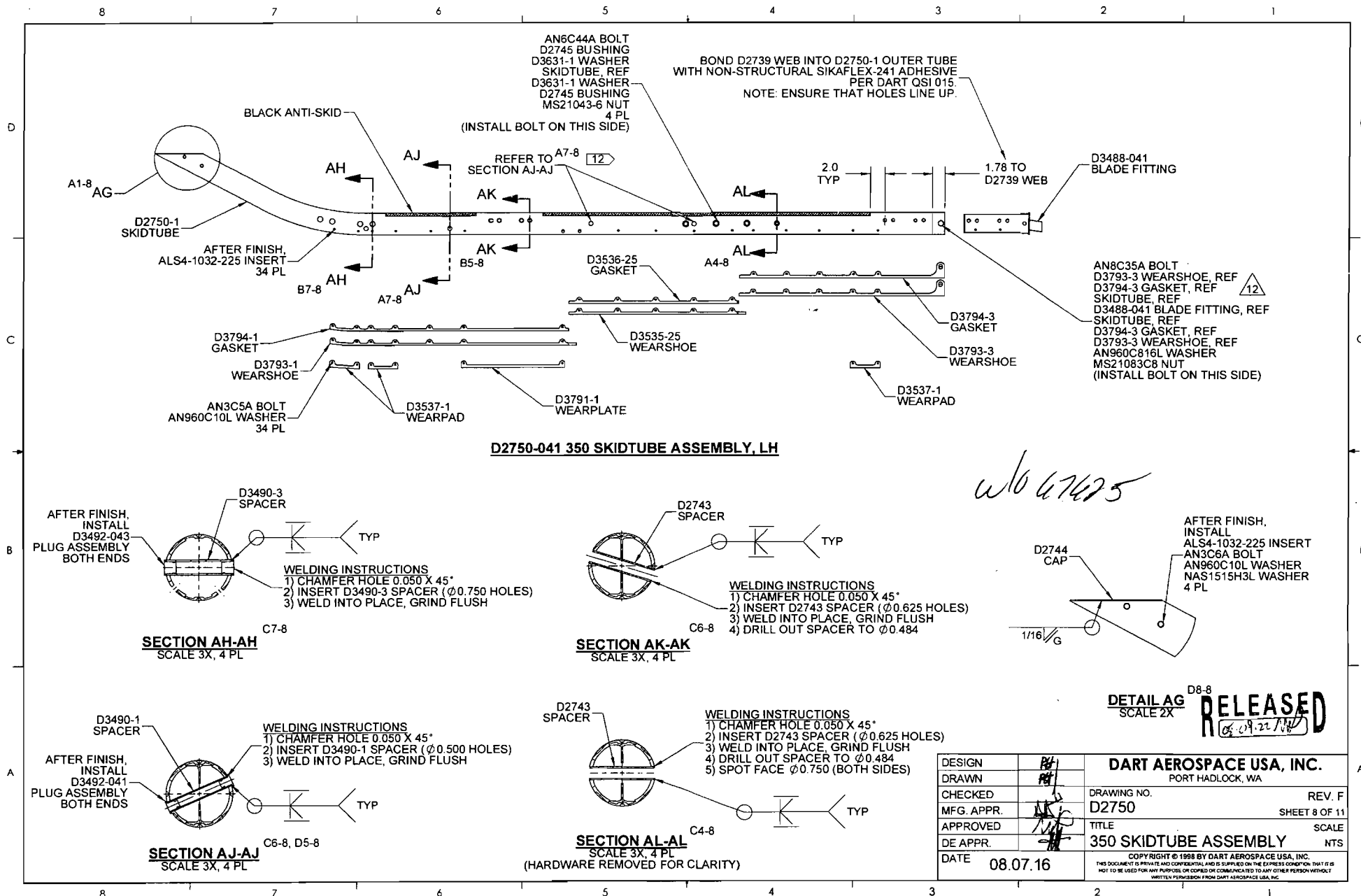
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
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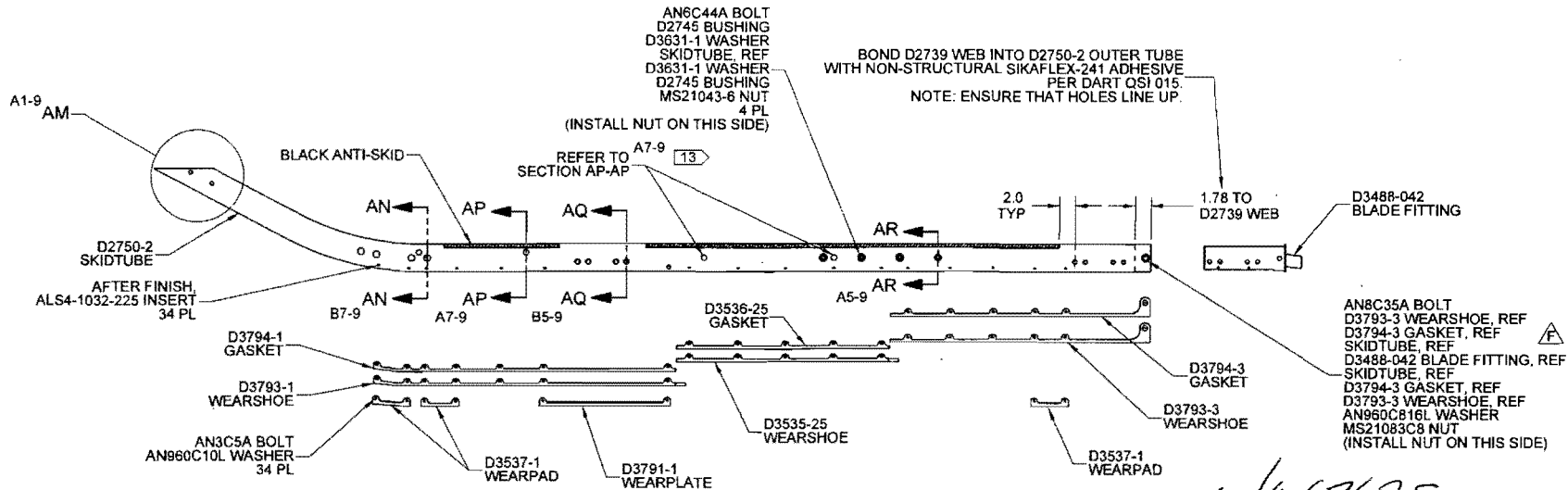
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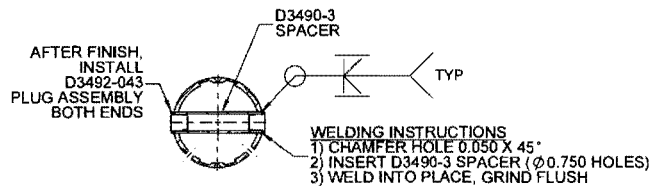
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

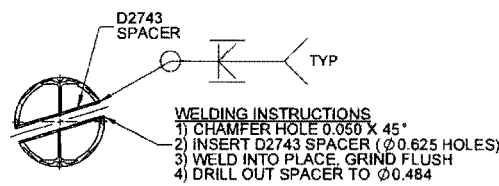
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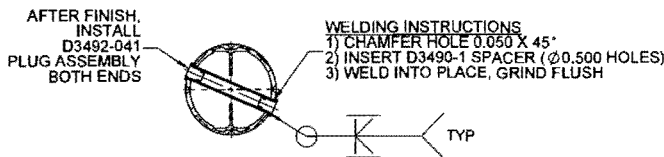
D2750-042 350 SKIDTUBE ASSEMBLY, RH



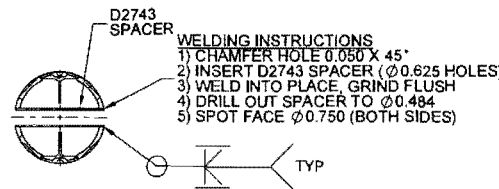
SECTION AN-AN
SCALE 3X, 4 PL



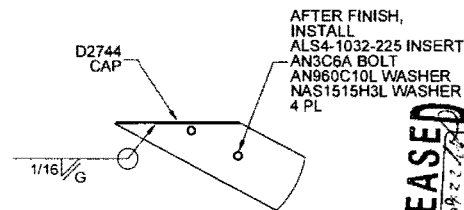
SECTION AQ-AQ
SCALE 3X, 4 PL



SECTION AP-AP
SCALE 3X, 4 PL



SECTION AR-AR
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)



DETAIL AM
SCALE 2X

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CHECKED	PA	
MFG. APPR.	MD	
APPROVED	MD	
DE APPR.	MD	
DATE	08.07.16	

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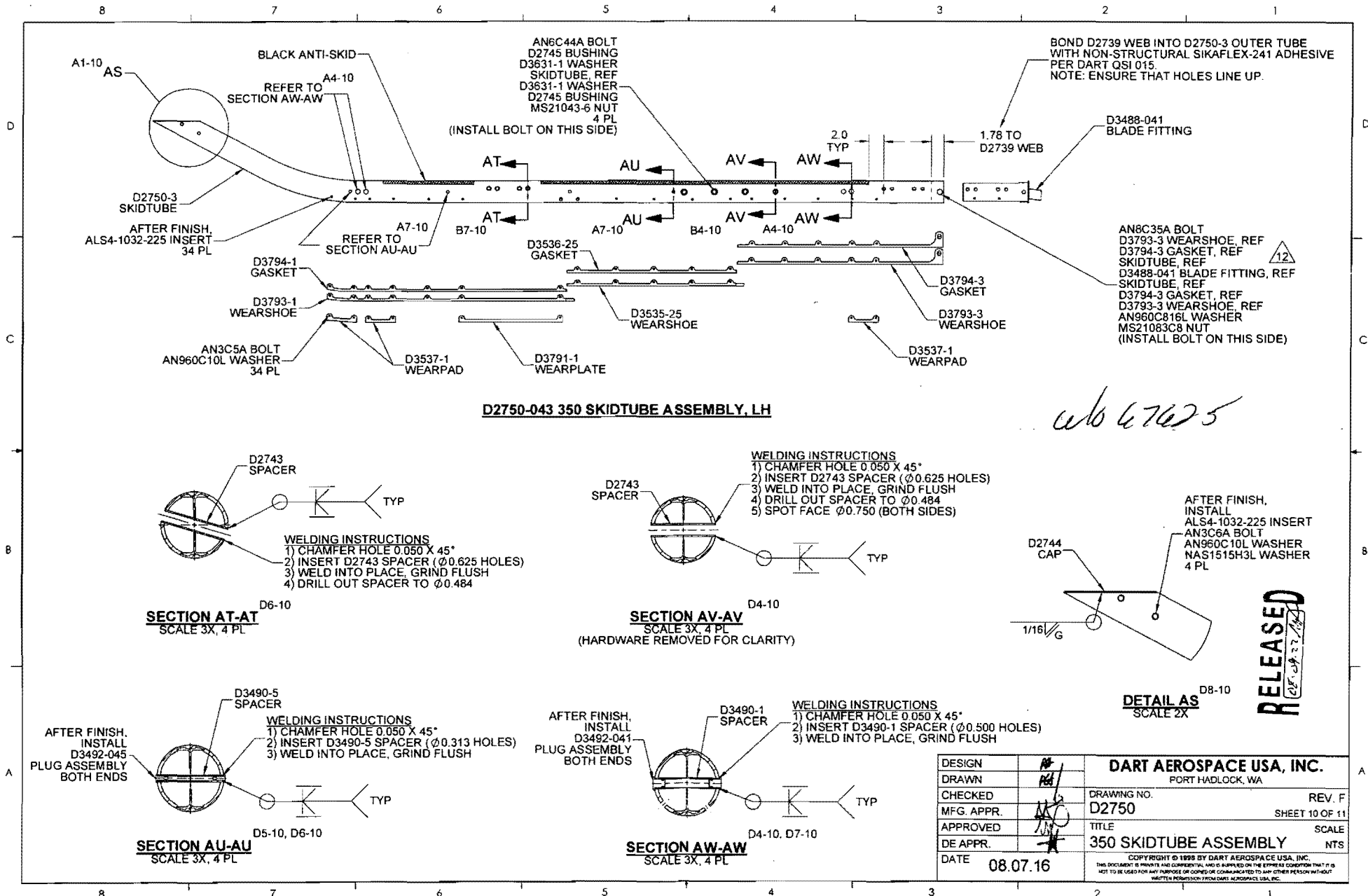
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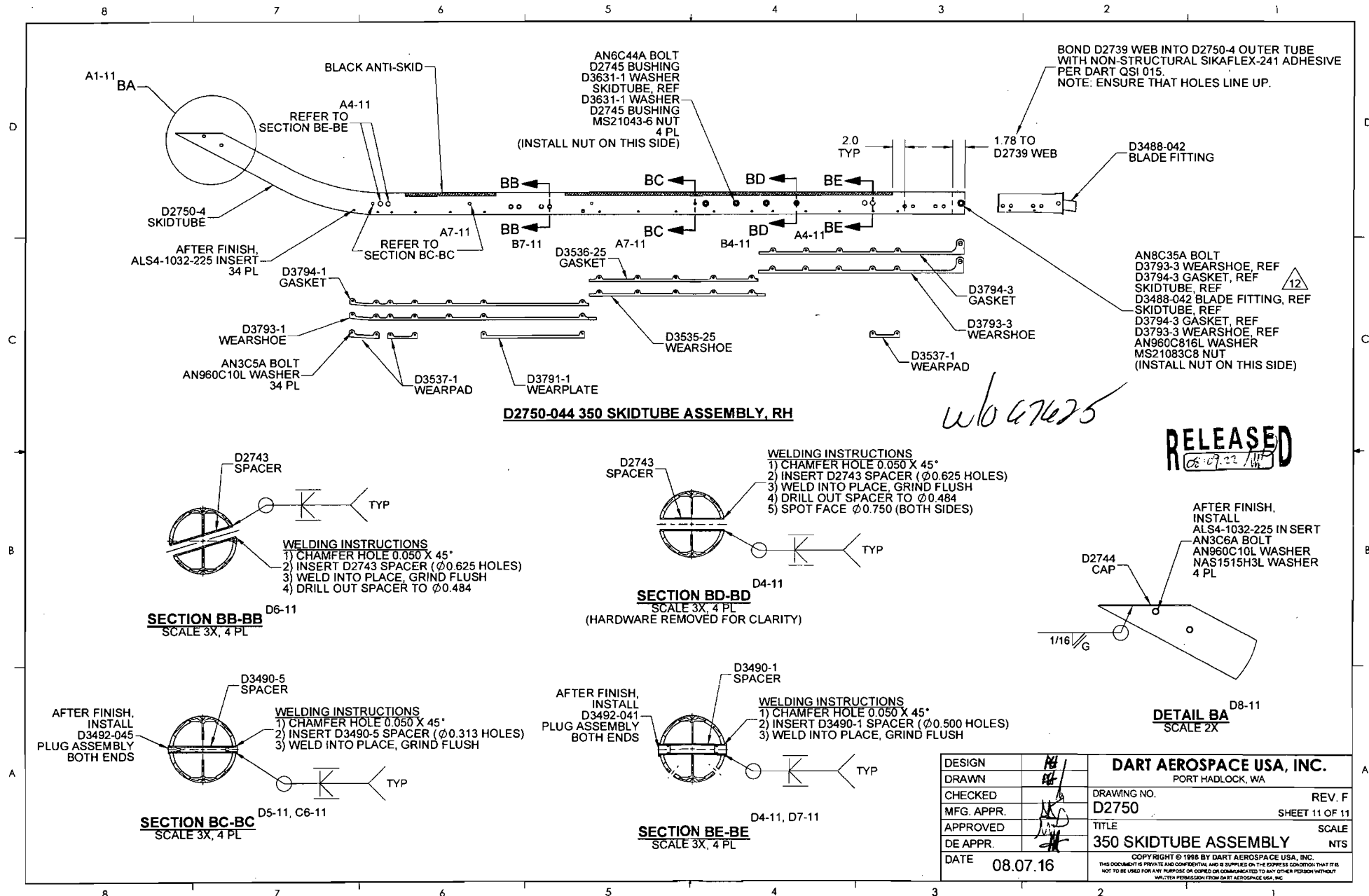
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 248

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 67178
Part number: D350 636 015
Description: 350
Welding Process: Tig[☒] Mig[]
Base material: Aluminum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat Lepp Date of Test Coupon 11.04.05

Welder Barclay Elliott Date of Test Coupon 11.04.05

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

